

VINE AND WINE BIOTECHNOLOGY

Bachelor Degree:	OENOLOGY	703G
Course title:	Vine and Wine Biotechnology	548
Year/Semester:	4th year/1st semester	ECTS Credits: 6

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CONTENTS

- UNIT1. Introduction to biotechnology. Wine Biotechnology.
- UNIT2. Bioprocess and cellular cultures.
- UNIT3. Foundations of molecular biotechnology. Manipulation and analysis of the DNA.
- UNIT4. Genetic engineering of wine microorganisms.
- UNIT5. Omics technologies and their application in the enology.
- UNIT6. Industrial enzymes and bioreactors.
- UNIT7. Plant biotechnology. Principles..
- UNIT8. Origin and domestication of the grapevine. Genetic resources, characterization. Genetic erosion.
- UNIT9. Selection methods in grapevine.
- UNIT10. Biotechnological methods. Mutagenesis. Plant tissue culture. Transformation.
- UNIT11. Genes and characters of interest in grapevine biotechnology: Resistance to diseases and wine quality.
- UNIT12. The genome of the grapevine. Applications of genomics and other-omics to viticulture.

REFERENCES

Title
Yeasts in food and beverages. Amparo Querol, Graham H. Fleet
Manual of industrial microbiology and biotechnology. Richard H. Baltz, Julian E. Davies, Arnold L. Demain
Molecular biotechnology: principles & applications of recombinant DNA / Bernard R. Glick, Jack J. Pasternak, Cheryl L Patten
Texto ilustrado de biología molecular e ingeniería genética: conceptos, técnicas y aplicaciones en ciencias de la salud / José Luque Cabrera, Ángel Herráez Sánchez.
Introducción a la mejora genética vegetal / José Ignacio Cubero
La calidad del vino desde el viñedo / José Hidalgo Togores.
Biología de la vid: fundamentos biológicos de la viticultura /Fernando Martínez de Toda Fernández.
Molecular biology & biotechnology of the grapevine / edited by Kalliopi A. Roubelakis -Angelakis.
Avances recientes en biotecnología vegetal e ingeniería genética de plantas / Antonio Benítez Burraco.



Recursos fitogenéticos / José Ignacio Cubero Salmerón, Salvador Nadal Moyano, M^a Teresa Moreno Yangüela.

Genética / Anthony J. F. Griffiths

Genetics, genomics and breeding of grapes / editors, Anne-Françoise Adam-Blondon, José M. Martínez-Zapater, Chittaranjan Kole.

Plant Biotechnology. The genetic manipulation of plants

Plant biotechnology and genetics: principles, techniques, and applications / edited by C. Neal Stewart.

EVALUATION SYSTEM

Works and projects 25%

Written proofs 50%

Observation skills 10%

Reports and Lab reports 15%